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July 24, 2018

Kimberly N. Tisa Region 1 PCB Administrator United States Environmental Protection Agency 5 Post Office Square, Suite 100 Boston, MA 02109-3912

Subject: Steel Inventory and Sample Plan for Structural Steel

New Milford CEC Project

Dear Ms. Tisa:

This letter is in response to the United States Environmental Protection Agency's (USEPA's) approval as documented in an e-mail from Kimberly N. Tisa (USEPA) to Michael F. Zarba (Public Works Director, Town of New Milford), titled CEC-Structural Steel Decontamination and Recycling, and dated September 21, 2017 (copy attached as Attachment 1). In that e-mail, USEPA approved the Town's general approach to the decontamination and sampling of the structural steel members generated during building demolition activities with the following conditions/requirements:

- Submittal to EPA of a revised Contractor PCB Work Plan that incorporates the approach to decontamination of the structural steel members.
- Submittal to EPA of a revised Structural Steel Decontamination and Wipe Sampling Plan
- Prior to conducting any additional paint sampling, the Town must complete the disassembly and inventory of the remaining stacks of steel (Stacks 2 through 6) as proposed in the Town's May 4, 2017 responses to EPA comments letter. The results of the inventory shall be provided to EPA and CTDEEP, including visual observations of the composition of each stack, the size of the structural steel members, including photo documentation, and the proposed number of PCB paint samples to be collected from each type of structural steel member.
- Prior to shipment of any waste or steel structural members off-site, the Town shall submit the PCB analytical results for post decontamination wipe samples and paint samples to both EPA and CTDEEP to support any proposed disposal or recycling, along with the name(s) of the disposal/recycling facility(ies) selected to receive such materials

• All steel sections where a previous paint sampling result indicated >/= 50 ppm PCBs, must be disposed of as a ≥50 mg/kg PCB waste in accordance with Condition 13(a)(ii) of the EPA September 1, 2015 PCB Approval and the PCB regulations at 40 CFR Part 761.

Additionally, EPA re-iterated several other requirements from it's prior approval on September 1, 2015:

- Except as otherwise authorized herein, the Town shall comply with all other requirements as specified in the EPA September 1, 2015 PCB Approval and any modifications thereto.
- All decontamination waste generated during this work shall be disposed in accordance with Condition 14 of the EPA September 1, 2015 PCB Approval.

The purpose of this letter is to (1) submit the results of the inventory of structural steel members resulting from the demolition of the building at the Century Enterprise Center (CEC) located at 12 Scovill Street in New Milford, Connecticut, and (2) submit the proposed paint sample plan based on this inventory for your approval and (3) request your authorization to conduct low pressure water decontamination of the sections selected for sampling and to conduct the volumetric paint sampling per this plan.

A formal Contractor PCB Work Plan, will be provided separately, prior to the resumption of other site work, including any disposal or recycling of the steel.

1.0 BACKGROUND

The presence of PCB containing dust on the structural steel support system of the building (i.e. steel columns, trusses and associated steel beams and bracing) and the potential presence of PCBs in the paint which covers the structural steel members made it necessary to remove all steel support structures from the debris. Cutting and removal of the steel (i.e., beams, columns and roof support trusses) from all other building debris was performed as demolition was occurring so as to minimize the segregation effort.

The resulting structural steel members were staged in piles as the building was being demolished. These structural steel members were then staged in stacks on the northern portion of the building slab. There are currently 6 stacks (Stacks 1 through 6) of steel present on the northern end of the building slab. These stacks were made up of a variety of structural steel building components (i.e. beams, columns and roof truss systems). Figure 1 provides the location of each stack on the former building slab and Table 1 provides its approximate volume as a total of the steel remaining on site.



Figure 1



Table 1

Stack	Approximate Volume (yrds.)	% of Total Volume of Steel
1	974	17.4%
2	1,333	23.7%
3	1,280	22.8%
4	1,280	22.8%
5/6	747	13.3%

Prior to the submittal of the plan in 2017, approximately 17.4% of the steel on site had been decontaminated using an approved low pressure water jet method. This steel had been separated from the other steel and was piled into a single stack and identified as Stack 1. Stack 1 was addressed in the March 2, 2017 Proposed Sampling Approach for Characterization of Paint on Structural Steel. In that plan, TRC described the structural steel components that made up Stack 1 and proposed a sampling plan for those components based on the percentage of the stack they made up.

For ease of reference, a copy of the March 2, 2017 paint sampling program letter, enclosed as Attachment 2 and the April 19, 2017 results submittal, Attachment 3, are provided. Copies of the attachments to those letters, which were voluminous, have previously been provided as both a hard copy and electronically and are therefore not



Ms. Kimberly N. Tisa July 24, 2018 Page 4

included herein. While EPA generally agreed with the approach taken to decontaminate and characterize Stack 1, it did not agree with the assessment that the composition of the other five stacks of steel could be extrapolated from the observed composition of Stack 1. As the steel in Stack 1 has already been decontaminated, inventoried and sampled, it is not discussed further in this document.

In response to EPA's request, the remaining five steel stacks (Stacks 2 through 6) have been disassembled and inventoried.

2.0 <u>STRUCTURAL STEEL INVENTORY</u>

On July 9, 2018, TRC and Costello Dismantling Company, Inc. (Costello) returned to the Site to begin disassembly of the remaining 5 stacks of structural steel members and inventory the individual steel members. Proceeding one stack at a time, Costello dismantled each of the stacks, and TRC personnel inventoried the structural steel members based on their size (e.g. 10" x 3" channel, 12" x 4" column, etc...). Photographs of typical structural steel members are provided in Attachment 4. During this operation, a representative number of individual structural steel members were pulled from the stack being inventoried based on the previously proposed sample plan and based on the presence of adequate paint on the component to obtain a paint sample, numbered, and set aside for future paint sampling. All of the 12 x 4 beams were separated into a separate stack and each of the five stacks reassembled after each had been inventoried.

Stack 6 was a small stack comprised of beams that had previously been cut into approximately 2' long pieces and prepared for shipment. Each piece was removed and inventoried. In order to compare the quantity of these 2 foot long sections to that in the other 5 stacks which are typically 24 feet long and to provide a summary of components on site by size, the total quantity of two foot long pieces counted in Stack 6 was divided by 10. The resultant value was essentially equivalent to the other beams on site. The equivalent number of full beams estimated is included in the totals provided below.

It should be noted that no decontamination or sampling was conducted during this work. The sole purpose of this work was to identify the different types of structural steel members present in each stack, and develop a paint sampling plan to determine if PCB Bulk Product paint is present on structural steel members and whether this steel can be recycled. As this inventory was completed prior to decontamination and wipe sampling, all structural steel members in Stacks 2 through 6, and those members set aside for future paint sampling will be decontaminated and wipe sampled prior to any such planned paint sampling.



2.1 Stack Composition and Structural Steel Members

The sample plan and approach was proposed in the Town's response to EPA's comment letter of May 4, 2017 (see page 10 of Attachment 5) as follows:

- 1. After the steel has been decontaminated, the TRC inspector will inspect each component.
 - a. All 12x4 I beams will be removed and tested separately as presented below.
 - b. TRC will confirm that the remaining beams sizes are included in the composition of beam sizes previously tested. Any that are not will be separated for additional bulk testing.
- 2. Bulk samples will be obtained on 10% of the total number of 12x4 beam separated from the pile to verify the designation for disposal/recycling prior to the disposal of the beams represented by those samples.
- 3. Bulk samples will be obtained on 10% of the total number of other beam sizes separated from the pile per 2.b above to verify the designation for disposal/recycling prior to the disposal of the beams represented by those samples.
- 4. In addition to the samples for unique sizes and for the 12x4 beams, a minimum of 20 additional paint samples will be obtained for each of the 3 remaining stacks (Stack 2, 3 and 4). These samples will represent the various sizes of beams identified during the disassembly and decontamination of each stack.
- 5. EPA will be contacted should any result indicate that contamination levels exceed 50 ppm and beams of those sizes will be isolated and the beams tested disposed of as a PCB Bulk Product.

Any alternate sampling plan or disposal proposed will be submitted to EPA for approval.

Accordingly, the total number of discreet members counted in this inventory for Stacks 2 through 6 were separated into these categories and are summarized in Table 2.

Table 2

Category	Quantity Identified
12x4 beams	1,232
Roof Assembly Sections	1,376
Beams Sizes Previously	1,848
Sampled	
Unique Beams Sizes Not	200
Previously Sampled in Stack	
1 Sample Program,	



2.1.1 Support Beams and Columns

The building support beams and columns consist principally of I beams of several different sizes, angle irons and channels. The channels were used to cover the various piping systems (e.g. roof drains and sprinkler piping) in the building and in a number of cases are still connected to the main columns in the steel piles.

2.1.2 Roof Truss Systems

The roof truss bracing system incorporates multiple components of various sizes. They were removed as a group, as evidenced in the photos below. Numerous small sections of these assemblies were identified in each of the stacks and, as proposed previously, they will be handled and sampled as a group.









2.1.3 ROOF SUPPORT I BEAMS (12"X4")

The 12"x4" I beams, the most prevalent beam size used in the structure, will be evaluated separately. Each has been removed from the stacks and are currently in a separate stack. The total number (1,232) of 12x4 beam sections has been determined and 123 (10%) of this total will be sampled.



2.2 Sample Plan

The approximate composition of Stacks 2, 3, 4, 5, and 6 identified in this inventory and the number of samples to be taken of each size consistent with this sample plan is provided in Table 3 below.

Table 3

				Total	
				Number of	
			Sub-Total of	Members	
			Each	Designated	Previous
			Structural	for Paint	Samples
			Member	Sampling	(Stack 1)
12	х	4	1,232	123	Х

Components Included in Stack 1 Sample program

Trus	Truss Assemblies		1,376	40	Χ
12	Х	6	315	3	Χ
12	Х	3	230	3	Χ
10	х	3	207	3	X
8	х	3	201	3	Χ
14	х	8	176	3	Χ
14	X	10	166	2	X
10	х	6	131	2	X
8	X	2	87	2	X
24	X	9	74	2	X
6	х	2	53	2	Χ
14	X	6	40	2	Х
12	Х	8	40	2	Χ
12	X	7	24	1	Х
24	х	10	17	1	Χ
7	X	2	15		Χ
18	X	8	14	1	Χ
10	X	4	11	1	Χ
26	X	10	9	1	Χ
24	X	6	7		Χ
10	х	8	7	1	Χ
20	X	8	6	1	Χ
22	х	9	5	1	Χ
8	х	6	4	1	Χ



14	X	7	3	1	Χ
36	X	12	2		Χ
27	X	10	2	1	Х
15	X	3	1		Х
14	X	11	1		Х
		subtotal		80	

Components Not Included in Stack 1 Sample program

	Size (In	iches)	Sub-Total of Each Structural Member	Total Number of Members Designated for Paint Sampling	Previous Samples (Stack 1)
14	х	4	25	1	
24	х	8	19		
16	х	8	17		
20	х	6	16		
8	х	4	16	2	
9	х	4	12		
22	х	10	11		
9	х	3	11		
20	х	10	7	1	
4	х	2	7	1	
12	х	10	6	1	
8	х	6	6	1	
22	Х	8	5		
18	X	6	5		
14	X	5	5		
12	X	9	5		
10	Х	5	4		
22	х	11	2		
21	X	9	2	1	
16	X	6	2	1	
6	Х	6	2		
6	X	4	2	2	
6	X	3	2		
3	X	2	2		
21	Х	8	1	2	
20	X	9	1		



18	х	10	1		
14	х	3	1	1	
13	х	6	1	1	
9	х	6	1		
8	х	7	1	1	
8	х	5	1	1	
4	х	3	1	1	
Add	litional	to be sele	cted	2	
Subtotal Unique Sizes		200	20		

3.0 <u>STRUCTURAL STEEL DECONTAMINATION AND WIPE SAMPLING PLAN</u>

A Final Structural Steel Decontamination and Wipe Sampling Plan, dated November 14, 2016 and written by Select Demo Services, LLC (Select Demo) was included as Attachment 5 to a March 2, 2017 letter from TRC to EPA seeking approval for a PCB sampling approach for the characterization of paint on structural steel members.

The effectiveness of this plan was demonstrated through a pilot program on the steel in Stack 1. The steel in Stack 1 was decontaminated using the low pressure water jet system, and then wipe sampled in accordance with the procedure outlined in Select Demo's November 14, 2016 Plan. Post decontamination wipe sampling of the steel structural members effectively showed non-detect levels of PCB contamination. This plan will be utilized to perform low pressure water jet decontamination prior to the performance of paint sampling for this effort.

Since these components are part of the initial 10,000 LF of Steel, one standard wipe test (761.123) will be taken per 100 LF of Steel (~1 every 4 beams), and labeled in accordance with the numbered component. Up to 10 Samples may be composited and this composite sample will represent up to 1,000 LF of decontaminated steel.

4.0 <u>AMERICAN ENVIRONMENTAL COMPANY</u>

Due to contractor availability, Costello will utilize the services of American Environmental Company in lieu of Select Demo to conduct the low pressure water decontamination and wipe sampling in support of this sampling effort. A copy of American Environmental's corporate information and project references is provided as Attachment 5.

To conclude, the goals of this document are to:



- 1. Submit the results of the inventory of the structural steel that is the result of building demolition activities completed at the Century Enterprise Center (CEC) located at 12 Scovill Street in New Milford, Connecticut.
- 2. Submit the Sample Plan for your approval
- 3. Request your approval to conduct the low pressure water wash process and to conduct the sampling program to determine the PCB content in paint for the structural steel in these sections in accordance with this plan.

Prior to shipment of any waste or steel structural members off-site, the Town shall submit the PCB analytical results for post decontamination wipe samples and paint samples to both EPA and CTDEEP to support any proposed disposal or recycling, along with the name(s) of the disposal/recycling facility(ies) selected to receive such materials as well as a formal change to the Contractor PCB Work Plan..

We appreciate your consideration and remain available to discuss this approach at your convenience.

Yours truly,

TRC ENVIRONMENTAL CORPORATION

Edward C. Doubleday Project Manager

Elia C. Doubledon

Attachments

- 1. e-mail from Kimberly N. Tisa (USEPA) to Michael F. Zarba (Public Works Director, Town of New Milford), titled CEC-Structural Steel Decontamination and Recycling, and dated September 21, 2017.
- 2. March 2, 2017 paint sampling program Letter
- 3. April 19, 2017 Results submittal letter
- 4. Photographs of representative components
- 5. Response to EPA 5 4 17 questions
- 6. American Environmental Company



ATTACHMENT 1

Doubleday, Edward

From: Mike Zarba <mzarba@newmilford.org>
Sent: Thursday, September 21, 2017 5:12 PM

To: Doubleday, Edward Cc: David Gronbach

Subject: Fwd: CEC - Structural Steel Decontamination and Recycling - EPA Approval

Here is are approval, with conditions, for the removal of structural steel.

Ed - can we get together tomorrow to discuss? Thanks,

Michael F. Zarba, P.E.

Public Works Director Town of New Milford (860) 355-6040 ext. 3247 phone (860) 355-6055 fax www.newmilford.org/DPW

----- Forwarded message -----

From: Tisa, Kimberly < Tisa. Kimberly@epa.gov >

Date: Thu, Sep 21, 2017 at 11:05 AM

Subject: CEC - Structural Steel Decontamination and Recycling - EPA Approval

To: Mike Zarba <mzarba@newmilford.org>

Cc: "Trombly, Gary" < Gary.Trombly@ct.gov >, "Tisa, Kimberly" < Tisa.Kimberly@epa.gov >

Mr. Zarba:

EPA has received the following information pertaining to the demolition debris that is/was located on the Century Enterprise Center Site. The debris, which includes structural steel beams, was generated during the demolition of the site building and additional sampling was performed to confirm PCB concentrations for disposal. The information pertaining to the steel was submitted pursuant to Attachment 1, Condition 13 of the September 1, 2015 PCB Cleanup and Disposal Approval under 40 CFR §§ 761.61(a) and (c). Documents provided to EPA on the debris, including the structural steel beams, include the following:

- September 22, 2016. Strategic Environmental Services PCB Sampling Plan for CEC Structural Columns and Trusses.
- October 4, 2016. Email transmittal from Town of New Milford (M. Zarba) to EPA (K. Tisa). Truss and Column PCB Sampling Results.
- October 5, 2016. EPA (K. Tisa) notification to Town (M. Zarba) that steel beams were to be disposed as a >/= 50
 ppm PCB waste unless otherwise sampled to determine disposal requirements. Determination based on fact that
 PCBs above regulatory thresholds were identified during truss/column sampling.

- October 14, 2016. Email transmittal from Town of New Milford (M. Zarba) to EPA (K. Tisa). SDS identified sample locations for paint sampling. Description, map, and photo-log for samples.
- October 20, 2016. Strategic Environmental Services PCB Remediation Waste Pilot Study.
- November 9, 2016. EPA (K. Tisa) comments to Town (M. Zarba) on PCB decontamination plan and that the results of the pilot study did not provide sufficient data/information to support proposed decontamination plan. Also requested that Town provide results of the SDS paint sampling results to EPA.
- November 21, 2016. Transmittal of SDS paint sampling results to EPA (K.Tisa) by SDS with Partners letter dated November 16, 2016.
- December 9, 2016. Proposed SIP Modification for management of concrete floor (included SDS PCB Workplan, Rev. 8, December 9, 2016; PCB Remediation Plan, Rev. 7 and Structural Steel Decontamination and Wipe Sampling Plan, Rev. 2, November 7, 2016). EPA approved 12/15/16 with condition requiring submittal of sand analytical data. The proposed modification also identified that additional sampling of the ACM pile would be conducted and that the structural steel would be temporarily re-located to the northern portion of the pad pending a decision by the Town on waste disposal.
- January 12, 2017. Transmittal of Results Summary Letter for PCB Sampling of ACM Debris Pile dated December 21, 2016. Based on these results, the Town indicated that the ACM Debris Pile would be disposed as non-friable ACM/Excluded PCB Product at Minerva, Waynesburg, OH.
- March 2, 2017 Proposed PCB Sampling Approach for Characterization of Paint on Structural Steel (includes SDS Structural Steel Decontamination and Wipe Sampling Plan, Rev. 3. November 14, 2016.)
- April 13, 2017. M. Zarba to K. Tisa notifying EPA of intention to use Waste Management in NH as disposal facility for PCB bulk product waste with non-friable ACM and < 50 ppm PCB remediation waste. EPA acknowledged via email on April 19, 2017.
- April 19, 2017 Characterization of Paint on Structural Steel for the New Milford CEC Project and Request for Authorization to Recycle (received by EPA on 4/24/17).
- April 27, 2017 Results Summary Letter for PCB Sampling of Sand Filled Pits.
- May 1, 2017 Attachment 3 to April 19, 2017 submittal (received by EPA on May 2, 2017).
- May 4, 2017. EPA Comments on April 19, 2017 Characterization of Paint on Structural Steel and Request for Authorization to Recycle.
- May 8, 2017. Email TRC (E. Doubleday) responses to EPA questions on Aroclor identified in floor caulk.
- May 24, 2017 Written Responses to EPA Comments dated May 4, 2017.
- July 20, 2017. Emails EPA Comments on EMSL QC Data, selection of low pressure decontamination method, and sand pit status.
- July 28, 2017. Email transmittal Response to EPA comment on low pressure decontamination method and sand pit status.

August 4, 2017. Email transmittal of EMSL QC Data for New Milford CEC Project samples.

In the April 19, 2017 Characterization of Paint on Structural Steel and Request for Authorization to Recycle, TRC (on behalf of the Town) concluded that with exception of the 12"x4" steel I-beams that are coated with paint exhibiting greater than or equal to (>/=) 50 ppm PCBs, the majority of the structural steel would be classified as an Excluded PCB Product as defined at 40 CFR § 761.3. This conclusion was based primarily on the PCB sampling associated with the Stack 1 steel. To support this conclusion, in the May 24, 2017 Response to EPA comments (page 10 of 14), the Town proposed to implement an Inspection and Test Plan during dismantlement and decontamination of the stacks of structural steel. In summary, following decontamination of the steel, additional sampling of the paint would be conducted to confirm PCB concentrations in the paint are less than (

Based on EPA's review of all information provided, the proposed decontamination and sampling plan for structural steel generated during building demolition activities and currently stockpiled on the Site appears reasonable to remove adhered dust/dirt and to confirm PCB concentrations for disposal/recycling. EPA is approving the Town's request for the structural steel with the following conditions:

- 1. Except as otherwise authorized herein, the Town shall comply with all other requirements as specified in the EPA September 1, 2015 PCB Approval and any modifications thereto.
- 2. The Town and/or its contractor shall submit a revised PCB Work Plan to reflect the decontamination of the structural steel;
- 3. The Town and/or its contactor shall submit a revised Structural Steel Decontamination and Wipe Sampling Plan to incorporate the additional paint sampling as described in the May 24, 2017 Responses to EPA Comments;

4. All steel sections where a previous paint sampling result indicated >/= 50 ppm PCBs, shall be disposed of a >/= 50 ppm PCB waste in accordance with Condition 13(a)(ii) of the EPA September 1, 2015 PCB Approval and the PCB regulations at 40 CFR Part 761;

- Prior to conducting the sampling of each disassembled/decontaminated stack, the Town shall provide to EPA and CTDEEP, its visual observations of the composition of the beam sizes present, including photodocumentation, and the number of PCB samples to be collected from each type of steel;
- 6. Prior to shipment of the waste off-site, the Town shall submit the PCB sample analytical results (paint and surface wipe samples) to both EPA and CTDEEP to support its proposed disposal/recycling with the name(s) of the disposal/recycling facility(ies) for the PCB wastes; and,
- 7. All decontamination waste generated during this work shall be disposed in accordance with Condition 14 of the EPA September 1, 2015 PCB Approval.

Should you have any questions, please feel free to contact me.

Kimberly N. Tisa, PCB Coordinator

USEPA

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ATTACHMENT 2



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March 2, 2017

Kimberly N. Tisa Region 1 PCB Administrator United States Environmental Protection Agency 5 Post Office Square, Suite 100 Boston, MA 02109-3912

Subject: Proposed PCB Sampling Approach for Characterization of Paint on

Structural Steel for the New Milford CEC Project

Dear Ms. Tisa:

The purpose of this letter is to (1) submit the steel decontamination and sampling plan (for dust contamination) for your approval, (2) to document the intent and approach to conducting a sampling program to determine the PCB content in paint for the structural steel that is the result of building demolition activities completed at the Century Enterprise Center (CEC) located at 12 Scovill Street in New Milford, Connecticut, (3) to provide the results of sampling campaigns to date, and (4) to provide the intended disposal/recycling plans for this material.

BACKGROUND

The Site, now vacant, was historically occupied by the former Scovill Tube Mill, and is currently owned by the Town of New Milford (Town). The Site and building have been the subject of numerous environmental investigations which have identified the presence of polychlorinated biphenyls (PCBs) on and within certain building structures. Notably, PCB contamination is present within most, if not all, of the concrete floor slab within the building.

Due to the poor condition of the roof of the main mill building, the building was declared unsafe by the Town of New Milford Building Official. The unsafe condition of the building prompted Costello Dismantling Company, Inc. (Costello) to obtain an Alternate Work Practice (AWP) from the Connecticut Department of Public Health (CT DPH) On August 17, 2016, the CT DPH issued an AWP that allowed Costello to demolish the building.

Ms. Kimberly N. Tisa March 2, 2017 Page 2

Demolition of the building began on October 12, 2016 and continued until November 14, 2016. Demolition began on the northern end of the building and continued southward until all building structures except the concrete slab had been razed.

The presence of PCB containing dust on the steel support system of the building (i.e. steel columns, trusses and associated steel beams and bracing) and the potential presence of PCBs in the paint which covers the steel supports made it necessary to remove all steel support structures from the debris. Cutting and removal of the steel (i.e., beams, columns and roof support trusses) from all other building debris was performed as demolition was occurring so as to minimize the segregation effort.

Steel was stockpiled in piles as the building was being demolished. These steel building support structures were than stockpiled in stacks on the northern portion of the building slab. There are currently 4 stacks of steel, each approximately 120 feet long, 24 feet wide and 12 feet high..

EPA approval for the Phase III clean up, "PCB Cleanup and Disposal Approval under 40 CFR §§ 761.61(a) and (c) Century Enterprise Center New Milford, Connecticut Approval letter dated September 1, 2015; Item 13, (Attachment 1) requires in part, that sampling analytical results shall be submitted to EPA for review prior to removal of these wastes from the site.

Accordingly, the purpose of this plan is to provide the analytical results that have been obtained to date and to provide the plan for future sampling and disposal/recycling of this material.

PCB Sampling Plan for Dust

Strategic Environmental Services, Inc. (SES), on behalf of the project demolition subcontractor, Costello Dismantling (Costello), prepared a pre-demolition PCB wipe sampling plan for structural steel columns and structural steel trusses. This plan was submitted to EPA on September 22, 2016 (Attachment 2).

Sampling in accordance with the submitted plan was conducted on September 2, and September 19, 2016. The results of this sampling campaign indicated that PCB contamination above regulatory limits was present on the steel beams. These results were provided to EPA on October 4, 2016 (Attachment 3).

The results of the pre-demolition wipe sampling indicated that PCBs (primarily the Aroclors 1242, 1248, and 1264) were detected at similar concentrations in most of the wipe samples, regardless of location. The widespread presence of PCBs, particularly in areas with no known releases or in areas where releases would be unlikely, suggests that the PCBs were present in the dust which had settled on the structural steel members. The results of the wipe sampling also indicated that in general, higher concentrations of PCBs



Ms. Kimberly N. Tisa March 2, 2017 Page 3

were detected in wipe samples collected from roof support trusses (horizontal surfaces) than were detected in the wipe samples collected from steel support columns (vertical surfaces). This distribution of PCB contamination and the relative consistency of the results suggests that more settling of PCB laden dusts had occurred on horizontal surfaces than on the vertical surfaces.

Since the surficial PCB contamination of the steel structural members by dust would make these materials PCB Remediation Waste, it was determined that the PCB-laden dust would have to be removed and verification sampling completed in order to allow the steel to be recycled rather than disposed.

Based on the desire to recycle the steel rather than dispose of it, a decontamination plan was drafted to remove the dust from the steel structural members after demolition.

STEEL DECONTAMINATION

Based on the results of the pre-demolition PCB wipe sampling, SES developed a pilot study plan to evaluate methods for removing the PCB contaminated dust from support structures in order to allow the steel to be recycled.

This pilot study demonstrated that a clean water wash, using a low pressure commercially available water jet system, was effective at reducing PCB concentrations on the steel structures as compared to methods utilizing HEPA Vacuuming and Compressed Air. The results of the study were submitted to EPA on November 3, 2016 (Attachment 4). A draft plan for decontamination of the steel using a low-pressure rinse was also submitted to EPA for review at this time.

FINAL DECONTAMINATION PLAN

Based on discussions with EPA regarding the draft plan and the confirmation sampling proposed, a final decontamination and sampling plan was prepared consistent with EPA's suggestions and is submitted herein (Attachment 5) for review and approval.

In order to demonstrate the effectiveness of this plan, one of the stacks of steel, which was located near the center section of the building, was decontaminated using the low pressure water jet system. Post decontamination wipe sampling of the steel structural members for a portion of this steel which effectively showed non-detect levels of contamination, confirmed the effectiveness of this methodology. These results are provided in Attachment 6.

Post decontamination sampling will be performed and documented in accordance with this plan prior to the initiation of the paint sampling program proposed herein.



LITIGATION RELATED SAMPLING

In parallel with the Project team efforts to develop a decontamination method and as part of the ongoing litigation involving the prior contractor for this site, the Court, based on a discovery request, ordered a small number of paint chip samples be collected from painted steel support structures from within the building and analyzed for PCBs. This sampling was conducted by Partner Engineers, Inc. (Partner) on behalf of Standard Demolition Services.

Partner selected the areas to be sampled as indicated in Table 1. The Court-ordered sampling was conducted during demolition, and as such, those pieces of structural steel selected for sampling were set aside as they were encountered during demolition. A copy of the sample map with pictures of each area is provided as Attachment 6.

Table 1
Court Ordered Paint Sampling Locations

Legend								
Sample No.	Paint	Orientation	Elevation	Description	Color			
1	Roof Support Truss	Horizontal	~50 feet	Painted steel roof truss members	Light green/white			
2	Ceiling Support Beams	Horizontal	~50 feet	Painted steel north to south orientation	Light green/white			
3	Ceiling Support Beams	Horizontal	~50 feet	Painted steel east to west orientation	Light green/white			
4	Building Envelope Beams	Horizontal	~20 feet	Painted steel beams around building envelope	Green			
5	Building Envelope Columns	Vertical	~20 feet	Painted steel upper column member	Light green/white			
6	Building Envelope Columns	Vertical	~5 feet	Painted steel lower column member	Green			
7	Inner Building Columns	Vertical	~30 feet	Painted steel upper column member	Light green/white			
8	Inner Building Columns	Vertical	~5 feet	Painted steel lower column member	Green			
9	Machine Shop Steel Beam	Horizontal	~10 feet	Painted steel in former machine shop	White			
10	Lower Steel Truss	Horizontal	~5 feet	Steel truss system in the center of the building	Light green/white			
11	Wall Panel Wide	Vertical	~5 feet	Painted steel wall panel (wide panel)	Dark Grey			
12	Wall Panel Narrow	Vertical	~5 feet	Painted steel wall panel (narrow panel)	Dark Grey			
13	Concrete Paint (lower)	Vertical	~5 feet	Paint on lower concrete walls	Green			
14	Concrete Paint (upper)	Vertical	~15 feet	Paint on upper concrete walls	Light green/white			
15	Brown Column Paint	Vertical	~5 feet	Brown paint on lower columns (field locate)	Brown			

Sampling was performed by Partner after manual decontamination using small wipes and hexane. Initial results from 4 samples indicated PCB contamination levels in the paint >50 ppm.

Since the manual decontamination methods used by Partner had not been proven, each of the 4 pieces of steel that were coated with paint exhibiting PCB concentrations >50 ppm were decontaminated using the same low pressure water jet method developed during the pilot test program. Each piece was then re-sampled by TRC. Post decontamination sample results are provided in Table 1. Analytical results for the paint samples collected by TRC indicate the detected PCB concentrations were below 50 ppm.



Table 2
Court Ordered Sample Results

Sample Number	Description	Beam	Size (inches)		Type	Initial result	Post Decontamination result
1	Roof Support Truss	12	Х	6.5	I beam	42.2	
2	Ceiling Support Beams	5	х	5	L Beam	23.8	
3	Ceiling Support Beams	4	х	5	L beam	11.1	
4	Building Envelop Beams	10	X	3	Channel Assembly	76	48
5	Building Envelop Columns	13.5	Х	8	I beam	58.9	21
6	Building Envelop Columns	9.5	Х	6	I beam	71	22
7	Inner Building Columns	13.5	Х	10	I beam	45	
8	Inner Building Columns	13.5	Х	11	I beam	64	32
9	Machine Shop Steel Beam	12	Х	4	I beam	42.8	
10	Lower Steel Truss	7	Х	6	L Beam	36.6	
11	Wall Panel					15	
12	Wall Panel					42.8	
13	Concrete Paint (Lower)		Not sampled Not				
14	Concrete Paint (Upper)		sampled				
15	Brown Column Paint	10	X	6	I beam	48.7	

Detailed sample results for both pre- and post-decontamination samples are provided in Attachment 7.

RANDOM SAMPLING

As building demolition was already underway at the time the Partner paint sample results were received, structural steel resulting from the building demolition was segregated from the rest of the building debris. To further evaluate the characteristics of the paint, 20 additional pieces of structural steel were selected at random from the different stacks of structural steel segregated during demolition, decontaminated using the low pressure water jet method and sampled. Table 3 provides the results of these samples. Note that 1 sample exceeded 50 ppm.



Table 3
Random Beam Sampling (11/30/16)

Sample Number	Beam Si	ze (inc	ches)	Result (ppm)
1A	36	Х	20	6.2
2A	24	Х	9	5.7
3A	12	х	4	17
4A	24	Х	9	9.5
5A	24	х	9	24
6A	12	Х	10	7.9
7A	12	Х	4	71
8A	12	Х	4	14
9A	14	Х	7	24
10A	12	Х	4	18
11A	27	Х	10	3.3
12A	12	Х	4	30
13A	12	Х	4	37
14A	12	Х	4	23
15A	12	Х	4	26
16A	12	Х	4	24
17A	12	Х	4	27
18A	14	Х	10	18
19A	12	Х	4	10
20A	12	Х	4	18

Pictures of each of the pieces of structural steel sample as well as the laboratory analytical report are included as Attachment 8.

FINDINGS OF THE INITIAL SAMPLING

As Tables 1 and 2 indicate, the 31 paint samples collected to date represent a cross section of the types of structural steel members present in the building and include support beams, columns and the roof truss systems.

After utilizing the proposed low pressure water jet decontamination method, a single sample (7A) on a 12" x 4" I-beam exhibited a PCB concentration of 71 ppm. This result was confirmed (at 74 ppm) with a second sample from a different location on the same beam on February 24, 2017. Note that there were also 11 other 12' x 4" beams sampled and the results for these samples ranged from 10-37 ppm. Since this type of beam was selected at random, it is not clear what section of the building the beam is from.



Ms. Kimberly N. Tisa March 2, 2017 Page 7

Also of note is the relative consistency in sample results. The PCB Aroclor detected in the paint samples is primarily Aroclor 1260. Aroclor 1242, 1248 and 1264 were consistently noted in the wipe samples collected from the structural steel prior to the building demolition and the low pressure water jet decontamination, but were generally not detected in the paint samples.

Through the decontamination pilot study and subsequent post-decontamination wipe sampling, it has been demonstrated that the proposed decontamination is successful in removing the PCB contaminated dust from the structural steel. However, subsequent paint sample data indicates that PCBs are present in the paint coating structural steel members and additional characterization of this material will be required in order to confirm that it is either Excluded PCB Product or PCB Bulk Product.

OBJECTIVE AND APPROACH TO CHARACTERIZATION OF PAINTED STRUCTURAL STEEL

Based on the sampling completed to date, it appears that the majority of the structural steel resulting from building demolition can be classified as an Excluded PCB Product which would allow recycling of the steel with an appropriate recycler. To date, the exception to this pattern are the 12" x 4" steel I-beams that are coated with paint that has exhibited PCB concentrations >50 ppm.

The purpose of this sample plan is to provide further characterization of the painted steel structural members to support recycling of the majority of the steel and segregate those painted steel members that must be handled as a PCB Bulk Product.

To date approximately 17.5% of the steel on site has been decontaminated using the low pressure water jet method. This steel has been separated from the other steel in a single stack, herein identified as Stack 1 to aid discussion. Stack 1 was further divided based on the size of various portions of the stack, as follows:

Section 1: ~24' by 48' by 12' high Section 2: ~20' by 24' by 12' high Section 3: ~25' by 24' by 4' high Section 4: ~15' by 24' by 12' high







Stack 1 (Looking North)

Stack 1 (Looking West)

An inventory of the steel beams was conducted for 2 different sections (1/3rd of section 1 and all of Section 2) which represents~ 33% of the total Stack 1 size. The quantities of each type of structural member were counted and the quantities were then extrapolated to provide an approximation of the total quantity of each type of structural member in the entirety of Stack 1.







Sections Inventoried

The purpose of this inventory was to determine the approximate number and size of components (columns, beams, channels, angle irons and trusses) in each stack and confirm that these stacks are representative of the steel inventory on site. This data was then used to develop the sample plan for the stack presented below.

ROOF TRUSS SYSTEMS

The individual beam sizes are grouped by function. For example, the roof truss bracing system incorporates multiple components of various sizes and will be sampled as a group.

Pictures of the beams, columns and roof truss system have been provided in Attachment 2, the SES report on column and truss sampling.





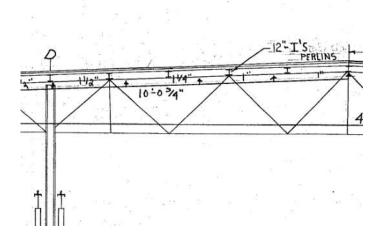


In order to confirm that the roof truss system can be classified as an Excluded PCB Product (<50 ppm), a total of 10 components, representing the various types of components in the truss system, will be selected and sampled.

ROOF SUPPORT I BEAMS (12"X4")

The 12"x4" I beams, the most prevalent beam size used in the structure, will be evaluated separately. In addition to several other minor uses (e.g., in the boiler house), they provide the main support for the roof concrete panels as depicted in Figure 1 below and are therefore used throughout the structure. While the majority of these beams sampled are <50 ppm, one beam was >50ppm. Accordingly, at a minimum, samples of 10 separate 12"x4" I-beams will be sampled in each stack. If any of the samples are >50 ppm, all 12"x4" beams in that stack will be removed from the stack and will be treated as a PCB bulk product.

Figure 1 Roof Truss Structure





SUPPORT BEAMS AND COLUMNS

The building support beams and columns consist principally of I beams of several different sizes, angle irons and channels. The channels were used to cover the various piping systems (e.g. roof drains and sprinkler piping) in the building and in a number of cases are still connected to the main columns in the steel pile.

A total of 3 additional samples will be taken from each type of column system as detailed in Table 3 below.

RAIL SUPPORT SYSTEM

Various components were used as part of the rail support structure for the various cranes throughout the building. Two of these structures have already been sampled. A total of 3 additional samples will be obtained from this group of components as detailed in Table 3.

The approximate composition of Stack 1 and the number of samples to be taken are provided in Table 3.

Table 3
Composition of Stack 1 and Sample Plan

Description	Size(Inches)			Туре	Total in Stack	No. of Samples
Building Envelop Columns	13.5	Х	8/10	I beam	42	3
And Rail Support Structure	24	х	6	I beam	9	2
	24	Х	9	I beam	9	2
	8	Х	6	Tee	21	1
Column Channels	12	Х	3	Channel	60	3
	10	Х	3	Channel	15	2
	7	х	2	Channel	9	1
Roof Support Beam	12	Х	4	I beam	195	10
Roof Truss System	10	Х	6/2.5	I beam	15	1
	2.5	Х	2.5	L Beam	12	1
	3.5	Х	3.5	L Beam	204	3
	3.5	х	4.5	L beam	135	3
	12	х	6.5/8	I beam	57	3
			_			35



Results of the pile sampling will be interpreted in the following manner:

- If all paint samples exhibit PCB concentrations < 50 mg/kg, than the steel pile will be handled and disposed of/recycled as a PCB Excluded Product.
- If any of the paint samples are determined to have PCB concentrations > 50 ppm, then components of the same size and function as those with PCB concentrations >50 ppm will be segregated and handled as a PCB Bulk Product or alternately, a plan for the future disposition of these materials will be developed based on available funding.

To conclude, the goals of this document are to:

- Establish an EPA-approved decontamination approach to the structural steel members that removes PCB-contaminated dust (PCB Remediation Waste) from the material;
- Establish an EPA-approved wipe sampling approach that verifies the removal of PCB dusts (PCB Remediation Waste) from the decontaminated steel;
- Describe the homogeneity of steel structural members sufficient to group them into functional groups for paint chip sampling;
- Establish an EPA-approved paint sampling program for further characterization of painted structural steel members; and
- Establish a procedure for the handling and ultimate disposition (recycling/disposal) of the structural steel.

We appreciate your consideration and remain available to discuss this approach at your convenience.

Yours truly,

TRC ENVIRONMENTAL CORPORATION

Edwe C Luc

Edward C Doubleday

Project Manager



Attachments

- PCB Cleanup and Disposal Approval under 40 CFR §§ 761.61(a) and (c) Century Enterprise Center New Milford, Connecticut Approval letter dated September 1, 2015
- 2 Strategic Environmental Services, Inc. (SES) PCB Sampling Plan dated 9/22/16
- 3 SSES Sampling Results
 - A. New Milford First Round Columns Sampling Results 9-20-16
 - B. New Milford PCB Sampling Locations-Columns in ug-100cm2
 - C. New Milford PCB Sampling Locations-Trusses in ug_100cm2
 - D. New Milford Truss Sampling
- 4 Costello New Milford PCB Pilot Study Results-3
- 5 Select Demo Services, LLC (SDS), Structural Steel Decontamination And Wipe Sampling Plan, Rev 3 dated 11/14/16
- 6 SDS Steel Wipe Sampling Results
- 7 Partner New Milford CEC Demo Paint Loc Pic
- 8 PCB Paint Pre Post Decon Sample results for Litigation
- 9 Random Steel Sampling (20 Beams)
 - A. Pictures 12 2016
 - B. Results



ATTACHMENT 3



Kimberly N. Tisa Region 1 PCB Administrator United States Environmental Protection Agency 5 Post Office Square, Suite 100 Boston, MA 02109-3912

Subject: Characterization of Paint on Structural Steel for the New Milford CEC Project

and Request for Authorization to Recycle

Dear Ms. Tisa:

The purpose of this letter is to (1) provide the results of the sampling program conducted to determine the PCB content in paint for the structural steel that is the result of building demolition activities completed at the Century Enterprise Center (CEC) located at 12 Scovill Street in New Milford, Connecticut; and (2) to request your authorization to dispose/recycle this material.

BACKGROUND

The Site, now vacant, was historically occupied by the former Scovill Tube Mill and is currently owned by the Town of New Milford (Town). The Site and building have been the subject of numerous environmental investigations which have identified the presence of polychlorinated biphenyls (PCBs) on and within certain building structures. Notably, PCB contamination was present within most, if not all, of the concrete floor slab within the building.

On March 2, 2017, a program was proposed to EPA whose goals were to:

- Establish an EPA-approved decontamination approach to the structural steel members that removes PCB-contaminated dust (PCB Remediation Waste) from the material;
- Establish an EPA-approved wipe sampling approach that verifies the removal of PCB dusts (PCB Remediation Waste) from the decontaminated steel;
- Describe the homogeneity of steel structural members sufficient to group them into functional groups for paint chip sampling;
- Establish an EPA-approved paint sampling program for characterization of painted structural steel members; and
- Establish a procedure for the handling and ultimate disposition (recycling/disposal) of the structural steel.

A copy of the March 2, 2017 paint sampling program letter is enclosed as Attachment 1. Copies of the attachments to that letter, which were voluminous, have previously been provided as both a hard copy and electronically and are therefore not included herein.

This letter provides the results of the sampling program conducted in accordance with that request. It is intended to comply with the requirements of the EPA approval for the Phase III clean up, "PCB Cleanup and Disposal Approval under 40 CFR §§ 761.61(a) and (c) Century Enterprise Center New Milford, Connecticut Approval letter dated September 1, 2015:, Item 13, (Attachment 1) which required in part, that sampling analytical results be submitted to EPA for review prior to removal of these wastes from the site.

The analytical results of past sampling associated with the structural steel members are enclosed as part of the March 2, 2017 paint sample program letter. The results of the most recent paint sampling program are presented herein.

CHARACTERIZATION OF PAINTED STRUCTURAL STEEL

As proposed, 43 paint chip samples were collected and analyzed. The results of these samples are summarized in Tables 1, 2, and 3. Copies of the analytical reports are provided in Attachments B, C, and D.

Table 1 April 2017 Samples.

Sample No.	Sample Date	Beam Size (Inches)	Result
1-PCB-P (41)	4/5/2017	13.5x8	16
2-PCB-P (43)	4/5/2017	13.5x8	26
3-PCB-P (54)	4/5/2017	13.5x8	18
4-PCB-P (32)	4/5/2017	24x9	11
5-PCB-P (33)	4/5/2017	24x9	8.1
6-PCB-P (26)	4/5/2017	12x3	13
7-PCB-P (48)	4/5/2017	10x3	ND
8-PCB-P (59A)	4/5/2017	8x6	8.1
9-PCB-P (61)	4/5/2017	12x3	5
10-PCB-P (62)	4/5/2017	12x3	7
11-PCB-P (60)	4/5/2017	7x2	15
12-PCB-P (25)	4/5/2017	24x9	5.1
13-PCB-P (27)	4/5/2017	12x4	6.4
14-PCB-P (35)	4/5/2017	12x4	7.1
15-PCB-P (36)	4/5/2017	12x4	30
16-PCB-P (37)	4/5/2017	12x4	30
17-PCB-P (44)	4/5/2017	12x4	18
18-PCB-P (45)	4/5/2017	12x4	7.1
19-PCB-P (52)	4/5/2017	12x4	27



Sample No.	Sample Date	Beam Size (Inches)	Result
20-PCB-P (56)	4/5/2017	12x4	38
21-PCB-P (59)	4/5/2017	12x4	35
22-PCB-P (31)	4/10/2017	24x9	23
23-PCB-P (50)	4/10/2017	15x3	21
24-PCB-P (63)	4/10/2017	10x3	45
25-PCB-P (53)	4/10/2017	10x6	22
26-PCB-P (58)	4/10/2017	3.5x4.5	4.8
27-PCB-P (58)	4/10/2017	2.5x3.5	3.5
28-PCB-P (38)	4/10/2017	2.5x3.5	14
29-PCB-P (64)	4/10/2017	3.5x4.5	13
30-PCB-P (28)	4/10/2017	3.5x3.5	13
31-PCB-P (38)	4/10/2017	12x4	11
32-PCB-P (65)	4/10/2017	3.5x4.5	39
33-PCB-P (55)	4/10/2017	12x6.5	9.6
34-PCB-P (66)	4/10/2017	12x8	17
35-PCB-P(67)	4/10/2017	12x8	7.5

A copy of the data package for these samples is provided in Attachment 2. Pictures of sample locations are provided in Attachment 3.

Table 2, below, provides a cross reference to the March 2, 2017 plan.

Table 2 Sample Plan

Description	Size(Inches)			Туре	No. of Samples	Sample Nos.
Building Envelop Columns	13.5	X	8/10	I beam	3	1,2,3
And Rail Support Structure	24	X	6	I beam	2	Note (1)
	24	X	9	I beam	2	4,5,12,22
	8	X	6	Tee	1	8
Column Channels	12	X	3	Channel	3	6,9,10
	10	X	3	Channel	2	7,23,24
	7	X	2	Channel	1	11



Description	Size(Inches)			Type	No. of Samples	Sample Nos.
Roof Support Beam	12	X	4	I beam	10	13-21, 31
Roof Truss System	10	X	6/2.5	I beam	1	25
	2.5	X	2.5	L Beam	1	27
	3.5	X	3.5	L Beam	3	28,30
	3.5	X	4.5	L beam	3	26,29,32
	12	X	6.5/8	I beam	3	33,34,35
					35	

Additionally, 6 samples were obtained from the crane beams. Table 3 provides the results of these samples.

Table 3 Crane Beams

Sample Number	Date Sampled	Result (ppm)
3-PCB Paint	2/22/17	18
4 PCB Paint	2/22/17	19
5-PCB Paint	2/22/17	44
6-PCB Paint	2/22/17	28
7-PCB Paint	2/22/17	29
8-PCB Paint	2/22/17	2.3

A copy of the data package for these samples is provided in Attachment 2.

Notes

(1) The beams identified as 24"x6" were inaccessible during the pile inventory due to their location in the pile and the sizes were estimated from photographs and visible observation. When the pile was relocated to select beams for sampling, it was determined that they were actually 24"x 9". Accordingly, the sample size for the 24"x 9" beams was increased to 4.

As reported in March, a single sample (7A) on a 12" x 4" I-beam exhibited a PCB concentration of >50 ppm (71 ppm) after decontamination. This result was confirmed (at 74 ppm) with a second sample from a different location on the same beam on February 22, 2017. However, a 3rd sample also adjacent to the original sample returned a result of 31 ppm. To date, 21 additional 12' x 4" beams have been sampled and the results for these samples are all <50ppm.



Table 1 12x4 Beam 7A

Sample Number	Location	Date Sampled	Beam Size (inches)	Result (ppm)
7A		11/30/16	12 x 4	71
1-PCB Paint	Adjacent to 7A (East)	2/22/17	Same	74
2 PCB Paint	Adjacent to 7A (West)	2/22/17	Same	31

A copy of the data package for these samples is provided in Attachment 2.

Request to Recycle

To date, 72 individual painted structural steel components have been sampled to determine PCB concentrations in the paint. Paint from a single component, a 12"x 4" I beam exhibited PCB concentrations >50ppm in two different locations on the same beam (71 and 74 ppm). It is notable that a third paint sample collected from another location on this same beam exhibited a PCB concentration of 38 ppm. As sampling of the paint on 21 other 12"x4" beams has shown PCB concentrations to be below 50 ppm, it is believed that the single beam is an anomaly and not representative of the other painted structural components resulting from building demolition.

In accordance with the requirements set forth in the EPA approval for the Phase III clean up, "PCB Cleanup and Disposal Approval under 40 CFR §§ 761.61(a) and (c) Century Enterprise Center New Milford, Connecticut Approval letter dated September 1, 2015:, Item 13, (Attachment 1), sampling analytical results have been submitted to EPA for review prior to removal of these wastes from the site and it is requested that the structural steel piles on site be handled and disposed of/recycled as a PCB Excluded Product following decontamination of all steel (by low pressure washing) and wipe sampling verification as specified in the March 2, 2017 program.

We appreciate your consideration and remain available to discuss at your convenience.

Yours truly,

TRC ENVIRONMENTAL CORPORATION

Edward C Doubleday Project Manager



Attachments

- TRC letter to Kimberly N. Tisa, Proposed PCB Sampling Approach for Characterization of Paint on Structural Steel for the New Milford CEC Project letter dated March 2,2017
- 2 Sampling Results
 - A. Crane Samples and Additional Samples on Beam 7A
 - B. TRC Steel Samples April 4, 2017
 - C. TRC Steel Samples April 10, 2017
- 3 Pictures



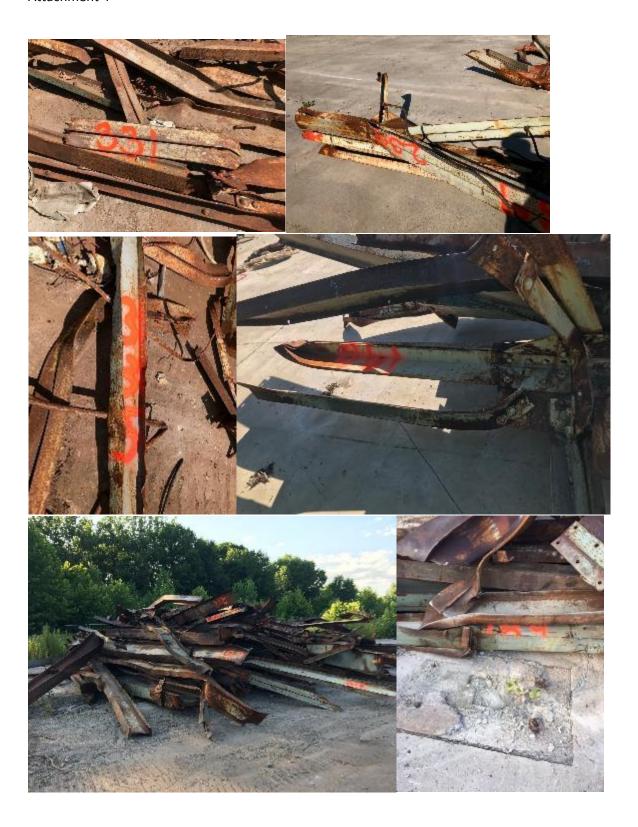
ATTACHMENT 4





Page **2** of **5**







ATTACHMENT 5

A. Strategic Environmental Services: September 22, 2016 PCB Sampling Plan for CEC Structural Columns and Trusses

This plan was provided to EPA electronically on September 23, 2016. On September 26, 2016 EPA spoke with Ross Hartman of SES regarding issues with the plan. Mr. Hartman indicated that the plan would be revised. EPA noted this discussion in a September 27, 2016 email to M. Zarba. However, EPA has no record indicating that a revised plan was submitted to EPA.

The sampling plan provided was Rev 3 of the plan. Rev 5 should have been submitted and is attached to this response (Attachment 1).

The sampling plan was revised as Rev 5 on 9/26/16 based on your discussions with Mr. Saccente. The revision was principally regarding the summary tables included in the text of the letter. The revisions were also discussed with you in the 10/3/16 conference call and the revised sample results which were based on these comments provided to you by email on 10/4/16 with the submittal of the PCB Work Plan Rev. 6.

We believe that a hard copy of this revised plan, rev 5, was provided to you during the on-site meeting in December but it does not appear that it was ever forwarded to you electronically.

It should be noted that the revised plan, Rev 5, retained the original issue date of 9/22/17 and that the revision level is not clearly identified. We have confirmed with Mr. Saccente that the attached plan, the version signed by Mr. Hartman, is Rev 5. A note to this effect has been added by Mr. Saccente to the document.

B. November 16, 2016 Partner Engineering and Science, Inc. letter concerning Paint Sample Recute

In the information provided, it was indicated that prior to paint sampling, surface areas were cleaned with hexane to remove oils and PCB-containing dust. It is further stated that both Mr. Zarba and Mr. Doubleday were satisfied that the steel had been thoroughly cleaned with hexane. Following this surface cleaning, paint samples were collected and analyzed for PCBs from 13 different locations. Four out of 13 samples were identified to contain PCBs at

Page 2

greater than (">") 50 ppm, unadjusted for iron. When adjusted for iron content, 5 out of 13 samples were found to contain > 50 ppm PCBs. Please confirm that the Town was satisfied as to the surface cleaning performed during this sampling event. For clarification, also please be aware that cleaning with hexane is an approved method under 40 CFR Part 761 for decontamination of PCBs from surfaces, albeit non-porous surfaces

May 24, 2017 Page 1 of 14

The Partner document referenced was not provided by the Town and was generated in support of the multi-million dollar litigation for litigation related purposes. It is not a project document.

The sampling was performed as a result of a Court order as a discovery issue. Due to the extent of rust and pitting on the steel pieces, the small size of the hexane wipe papers and manual cleaning method used by Partner, the cleaning wipes typically contained visible residue on them even after lengthy cleaning. TRC and the Town agreed that the cleaning was adequate for discovery purposes.

As has been detailed, after it was determined that surface contamination existed by the project team, the Town performed a formal pilot program to determine the best method for decontamination of the steel to remove dust and accumulated dirt and determined that a low pressure water jet approach was effective.

C. March 2, 2017 Proposed PCB Sampling Approach for Characterization of Paint on Structural Steel

For clarification on this submittal, EPA's Approval did not require submittal and EPA
approval of this plan nor did CTDEEP require submittal of such document. Rather,
EPA's Approval required submittal of data to support an alternative disposal from the
greater than or equal to (">") 50 ppm PCB waste requirement under the Approval.

Understand. The intent of these submittals is to provide the data which supports this alternate disposal.

- 2. Page 2. PCB Sampling Plan for Dust
 - Attachment 2. Please see Section A above with EPA comments on September 22, 2016 PCB Sampling Plan.
 - b. 3rd paragraph. Reference is made to Aroclor 1264 and that the primary Aroclors identified in the wipe samples were 1242, 1248, and 1264. It is not clear if 1264 should be Aroclor 1254 or 1260. Also, EPA's review of the data indicated that the primary Aroclors identified appeared to be 1248, 1254, 1260 and in some cases 1268. Clarification is requested on the Town's conclusion pertaining to the identified Aroclors.
- a. Response above
- b. Reference to Aroclor 1264 is in error. The primary aroclors identified are 1248, 1254, 1260 and 1268.

May 24, 2017 Page 2 of 14

3. Page 3. Final Decontamination Plan.

a. It is indicated that to confirm the effectiveness of the plan (Attachment 5), that one of the stacks of steel located in the center section of the building was decontaminated. Given the information (photos with wipe sample locations) provided in Attachment 6, it would appear that many of the wipe sample locations were either highly rusted and/or contained no paint. Thus, please be aware that for purposes of EPA's evaluation, these wipe sample results could only be used to determine if surficial (e.g., PCB dust) was present and could not be used to conclude anything regarding the PCB concentrations in the paint. Please provide a copy of the wipe sampling procedure used by SDS.

The wipe sampling program was performed solely to determine the effectiveness of the low-pressure water jet in removing potential surficial PCB contamination related to dust and/or dirt. Wipe samples were not intended to provide data relative to the potential PCB content of the paint.

SDS performed a Standard Wipe Test as defined in §761.123. Their standard procedure has been submitted with other documents and is provided below:

Mark out sample locations on beam with marking paint.

- 1. Take photos of beams and marked locations.
- 2. Don latex gloves.
- 3. Open sealed package containing wipe.
- 4. Apply Hexane solution to the wipe.
- 5. In the case of the field blank, place the wetted wipe in a sampling jar, label it, and place jar in cooler.
- 6. In the case of a wipe sample proceed to the correct location of a beam, and wipe a flat surface of that beam in the randomly determined location.
- 7. Wipe a 10 centimeter square location, using a pre-made template.
- 8. Fold the wipe, soiled side in, and place in labeled jar, then place that jar in cooler.
- 9. Remove latex gloves, dispose of them and template as PCB Remediation Waste.
- 10. Don new gloves, obtain new template, and repeat until all samples have been collected.
- 11. The samples will be delivered on ice to EMSL in Cinnaminson, New Jersey. (overnight or priority delivery)
- 12. Analysis of the samples will be 3 day to a week Turn Around Time, based on lab availability.

The program for wipe sampling is specified in Select Demo Services, LLC (SDS), Structural Steel Decontamination and Wipe Sampling Plan, Rev 3 dated 11/14/16 and repeated, in part, below

from the SDS Plan

- 13. For the Initial 10,000 LF of Steel, one standard wipe test (761.123) will be taken by SDS per 100 LF of Steel, and labeled in accordance with numbered pile.
- 14. Up to 10 Samples will be composited and this composite sample will represent up to 1,000 LF of decontaminated steel.
 - a. For the Initial 10,000 LF of Steel the total number of Composite Samples will be 10, from 100 individual wipe tests (10 per composite-representing 1,000 LF of Steel).

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- b. If all results from Initial 10,000 LF of Steel Decontamination show that the Decontamination is effective at producing results below 10 ug/100 cm² then the remaining Steel would have sampling frequency reduced to one standard wipe sample per 500 LF of Steel and up to 10 samples would be composited for analysis of one sample representing 5,000 LF of Steel, which would yield an estimated additional 21 Composite samples.
 - For the EMSL data, no QA/QC sample such as surrogate recoveries, was included. Thus, it is unclear how this data was validated.

Provided as Attachment 2

c. Attachment 5: November 14, 2016, Rev. 3 Structural Steel and Decontamination and Wipe Sampling Plan. Please clarify if at any point prior to the March 2, 2017 submittal, if this revision was ever provided to EPA, as EPA was unable to find any record of a previous submttal to EPA.

This was the first submittal of the revised plan.

A previous version of the plan had been submitted and was the subject of informal discussions between Bill Finn of Select Demo and yourself. This plan was revised based on those discussions and submitted for the first time with the March 2 transmittal.

- 4. Page 4. Last paragraph. It is stated that because the manual decontamination method used by Partner had not been proven, decontamination of 4 steel beams using the low pressure water jet method was evaluated. (As noted above in Section B, manual decontamination of surfaces with hexane is authorized as a proven decontamination method under 40 CFR § 761.79 given that PCBs are at least 5% soluble in hexane.) The Town's assessment for the initial 4 sample areas included decontamination using the low pressure water jet system followed by paint sampling.
 - a. Please clarify how the Town was able to identify the exact piece of steel beam associated with these 4 locations. EPA assumes that the Town decontaminated and collected the paint sample from an adjacent location rather than from the same sample location as Partner, but EPA requests confirmation on this.

This is confirmed.

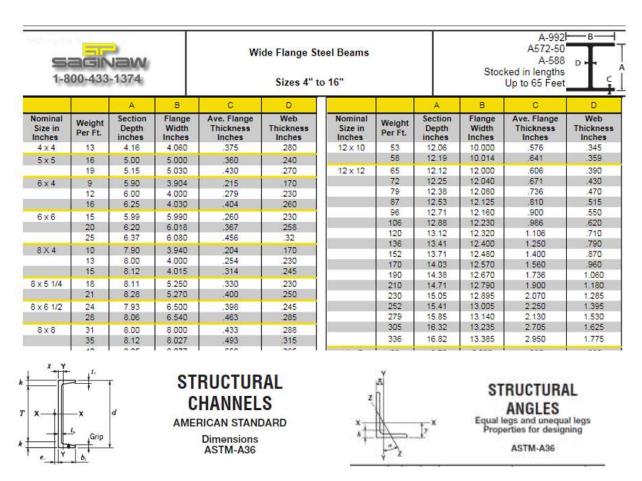
The steel beams sampled by Partner, which are typically 4 to 6 feet in length, were isolated and maintained in a locked storage area during demolition. Each beam had been labeled and a picture taken of the label. These beams were decontaminated and the beam identification confirmed by TRC after decontamination. Paint samples were taken by TRC technicians adjacent to the areas sampled by Partner. These beams remain identifiable on site.

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Table 2. Please confirm that the beam size units are correctly expressed (inches) for both dimensions. EPA believes that at least one dimension should be expressed in feet rather than in inches.

The dimensions provided are the cross section dimension for the components. The beams are principally a combination of I beams, channels and angle irons. Individual components vary in length with most beams 20-24 feet in length. The exception is the roof bracing components which are shorter and generally consist of sections containing multiple size angle irons and beams.

For example, the dimensions used to describe beams are depicted in the drawing below as dimensions A and B.



The inconsistency in reporting the size of beams is due to the fact that beams had been measured by different TRC personnel at different times using different methodologies. For example, some included the thickness of the flange in the cross section numbers while other didn't. Additionally, the beams were twisted and bent during demolition making measurements more difficult.

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6. Tables 2 and 3.

a. As indicated in Section B, above, the Partner analytical results were adjusted by the iron content of the sample. Please clarify if the Town considered adjustment of the paint analytical results based on the iron content in its samples. If not, why?

The Partner analytical results were obtained for litigation purposes and are not a project document. The calculations were also done for litigation purposes. We are aware of no EPA or CTDEEP regulations or requirements which specify adjustments for iron content. An opposing argument may be offered that the iron oxide in the rust attracts or traps PCB's and the sample results may have a high bias. TRC knows of no other project where paint sample results have been adjusted for rust or iron and do not believe that it is appropriate here.

b. With respect to the analytical data reports provided in Attachment 8, EPA notes a huge difference between the iron content of the Partner samples versus those samples collected by TRC. There is no discussion of how this could have affected the reported PCB analytical results within the submittal. It is also interesting to note that only one (1) Aroclor was reported in the TRC samples versus multiple Aroclors in the Partner samples. However, it was indicated on the Phoenix Lab reports that the PCB pattern indicated there was a mixture of Aroclors and that the PCB was quantified as "a timed group and reported as Aroclor 1260". It is unclear if this could have caused a bias-low reporting concentration in the samples. This should be discussed in the submittal. EPA also requests that the Town provide EPA with copies of the PCB chromatograms and associated calibration standards for the samples analyzed by Phoenix and identified as samples #4, #5, #6, #8, #9A-PCB-Paint, #12A-PCB-Paint, and #13A-PCB-Paint.

As noted by EPA, Phoenix did indicate the presence of a mixture of Aroclors and that the total PCBs were quantitated as a timed group and reported as Aroclor 1260.

The table below summarizes the Aroclors present in each of the 20 samples. The Aroclors identified in the Partner samples included 1248, 1254, 1260, and 1268. The identification of Aroclors can be a subjective process, especially when multiple Aroclors in the same retention time range of the chromatogram exist, which is the case for Aroclors 1254, 1260, 1262, and 1268. When multiple Aroclors exist, clear identification is also dependent upon the laboratory's GC temperature program and subsequent analysis time; the two laboratories being compared may have utilized different temperature programs. Based on this subjectivity and the use of a timed range with Phoenix data, the difference in reported Aroclors for the two laboratories is not surprising.

Sample ID	Aroclors Identified	Sample ID	Aroclors Identified
1A	1254	11A	1260
2A	1254	12A	1248, 1254, 1260*

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3A	1260	13A	1248, 1254, 1260*
4A	1248, 1254, 1260*	14A	1248, 1254, 1260*
5A	1260	15A	1248, 1254, 1260*
6A	1260	16A	1248, 1254, 1260*
7A	1260	17A	1248, 1254, 1260*
8A	1260	18A	1260
9A	1248, 1254, 1260*	19A	1248, 1254, 1260*
10A	1260	20A	1260

^{*}Reported as a timed range because the patterns were not discernible and resembled a mixture of these 3 Aroclors.

The potential for a bias in samples where multiple Aroclors were reported as a timed range is not determinable based on the current available data as the calibration factors were only provided for Aroclor 1260 in the initial calibration associated with these samples (*). In addition, the potential biases will also be sample-specific, depending on which Aroclor was potentially dominant in the sample. However, it can be stated that the potential biases will likely be minimal as Aroclors 1248, 1254, and 1260 typically have similar response on the GC/ECD. In addition, the laboratory performed a one-point timed range calibration using all three Aroclors and used this new response factor to quantitate these samples, Quantitation using the response factor for the timed range should not significantly affect the quantitation of the reported Aroclor

Additionally, TRC QA/QC performed an internal data validation audit as well. The results of this audit is provided in Attachment 3.

Chromatograms for samples #4, #5, #6, #8, #9A-PCB-Paint, #12A-PCB-Paint, and #13A-PCB-Paint and associated calibration standards are provided in Attachment 4.

 Page 7. 1st paragraph. It is indicated that the PCB Aroclor primarily detected in the paint samples is Aroclor 1260. EPA does not believe this is an accurate statement. Please see EPA Comment 6.b., above.

Responded to above

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8. Pages 7 through 10

- a. As described, approximately 17.5% of the overall steel that has been decontaminated using the low pressure water jetting system, was placed into "Stack 1". Stack 1 was then divided into 4 sections. Two of these sections were then inventoried to determine how much of each type of steel was present and then those numbers were extrapolated to approximate the total amount of each steel type remaining at the site in all 4 stacks. Table 3 then provides the composition of Stack 1 based on this procedure.
 - Please provide the composition of the individual 2 sections that were inventoried and then explain how Table 3 was developed for Stack 1.

The following table provides the composition for the quantities of each type that was inventoried/counted. Initially, each beam was numbered on a drawing. Accessible components were then labeled with chalk, measured and counted. The size of inaccessible beams higher in the stack was then estimated based on a review of detailed photographs.

Description	Size(Inches)			Туре	Counted	Total in Stack	No. of Samples
Building Envelop Columns	13.5	Х	8/10	I beam	14	42	3
And Rail Support Structure	24	Х	6	I beam	3	9	2
	24	Х	9	I beam	3	9	2
	8	Х	6	Tee	7	21	1
Column Channels	12	Х	3	Channel	20	60	3
	10	Х	3	Channel	5	15	2
	7	Х	2	Channel	3	9	1
Roof Support Beam	12	Х	4	I beam	65	195	10
Roof Truss System	10	Х	6/2.5	I beam	5	15	1
	2.5	Х	2.5	L Beam	4	12	1
	3.5	Х	3.5	L Beam	68	204	3
	3.5	Х	4.5	L beam	45	135	3
	12	Х	6.5/8	I beam	19	57	3
							35

Those counted represent 33% of the total in Stack 1 based on the physical dimensions of the sections counted compared to the overall stack size. Accordingly, the number counted were multiplied by 3 to approximate the total number in Stack 1.

It should be noted that, as indicated in the picture below, many sections of the roofing support structure consists of multiple size components which remained connected. These sections were generally much shorter than the other beams. These were 'counted' as the size beam most predominant in the section.

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ii. Please provide the estimated number of each type of steel component remaining at the Site (i.e., in the 4 Stacks).

The following table provides a summary of the size of the stacks of steel remaining on site.

Stack	Width	Length	Height	Volume (Yds)	% of total
1A	24	24	12	256	4.6%
1B	24	24	12	256	4.6%
1C	20	24	12	213	3.8%
1D	25	24	4	89	1.6%
1E	15	24	12	160	2.9%
2A	96	24	14	1,195	21.4%
2B	24	24	6	128	2.3%
3	120	24	12	1,280	22.9%
4	120	24	12	1,280	22.9%
5	62	24	12	661	11.8%
6	20	12	8	71	1.3%
Total	_	_		4,615	

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Note that the 3 main stacks (2, 3 and 4) are each \sim 120 feet long number but have varying heights. Two smaller stacks are also identified.

Since we have estimated that the stack inventoried represents 17.5% of the total steel on site, the estimated number of each type of steel component would be approximately 6 times the numbers provided.

iii. Given that only 1 stack was "disassembled" and inventoried in this manner, please explain how the Town has determined that this 1 Stack can be used as the basis for the steel inventory in the remaining 3 stacks of steel.

TRC and the Town have performed a visual inspection of the remaining 6 stacks to evaluate if beams of different sizes are evident. We concentrated on beams of 12" sizes and larger. This inspection did not identify sizes that were not in our disassembled stack. The results of this inspection were the basis for this conclusion.

However, we propose that an Inspection and Test Plan be implemented to confirm this assumption as additional stacks are disassembled and decontaminated. This approach would also address the 12x4 beam size where the >50 ppm measurement for a single beam was identified. Through the use of this Inspection and Test Plan, the steel beams that could potentially be a PCB Bulk Product can be discriminated from the rest of the steel.

Specifically this plan will consist of the following:

- 1. After the steel has been decontaminated, the TRC inspector will inspect each component.
 - a. All 12x4 I beams will be removed and tested separately as presented below.
 - TRC will confirm that the remaining beams sizes are included in the composition of beam sizes previously tested. Any that are not will be separated for additional bulk testing.
- 2. Bulk samples will be obtained on 10% of the total number of 12x4 beam separated from the pile to verify the designation for disposal/recycling prior to the disposal of the beams represented by those samples.
- 3. Bulk samples will be obtained on 10% of the total number of other beam sizes separated from the pile per 2.b above to verify the designation for disposal/recycling prior to the disposal of the beams represented by those samples.
- 4. In addition to the samples for unique sizes and for the 12x4 beams, a minimum of 20 additional paint samples will be obtained for each of the 3 remaining stacks (Stack 2, 3 and 4). These samples will represent the various sizes of beams identified during the disassembly and decontamination of each stack.
- 5. EPA will be contacted should any result indicate that contamination levels exceed 50 ppm and beams of those sizes will be isolated and the beams tested disposed of as a PCB Bulk Product. Any alternate sampling plan or disposal proposed will be submitted to EPA for approval.

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iv. Based on the inventory of Stack 1, please clarify if all of the components were found to be painted or if any type of components were generally bare (e.g., > 95% of surface showing little to no paint).

Essentially all of the steel components were painted. The only notable exceptions is the piping used principally for the roof drains and water supply.

b. Page 9. The first paragraph is confusing. Here it is indicated that the purpose of the inventory was to determine information on each "stack" and then confirm that these "stacks" are representative of the steel inventory on site. In this paragraph, should "stack" be "section"? Otherwise, please clarify this paragraph.

The "Sections" and "Stacks" have been identified above.

c. Table 3. Based on EPA's analysis of Table 3, the number of samples collected vs. total for each type of steel component varied between 1.5% to approximately 20%. It is unclear how the Town determined that these samples are adequate to represent all the steel associated with Stack 1, and then be extrapolated to the remaining Stacks. Further, it is unclear if all component types were included in this sampling. Based on the component descriptions in Table 2, there appear to be components not shown in Table 3. For example, Building Envelop Columns (9.5 x 6) and Inner Building Columns (13.5 x 11). Please clarify and discuss.

TRC has confirmed that the components identified in the partner sampling program conducted for litigation purposes are also included in the TRC sample plan.

The 9.5 x 6 Envelop Column identified in Table 2 (partner litigation samples) was measured to be the same size as sample No. 25 in Table 3. Each is a 10×6 l beam of the same size.

The steel section identified as # 7 13.5 x 11 Inner Building Column identified in Table 2 (Partner litigation samples) as #8 is the same size as Nos. 6A and 18A of Table 3 (TRC Random Beam Sampling).

Page 10 and 11. EPA requests that dimension units be reviewed and corrected, as necessary, for accuracy. It appears that some units expressed as inches should be expressed in "feet".

As previously discussed, the dimensions are all in inches.

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D. April 19, 2017 Characterization of Paint on Structural Steel and Request for Authorization to Recycle

- In this submittal, the Town has provided the results of additional paint samples collected
 from a pile of steel previously decontaminated using the low pressure water jet system
 (also described in the March 2, 2017 submittal). In its conclusions, the Town has
 determined that the paint on the structural steel is an Excluded PCB product and thus is
 not regulated for disposal under 40 CFR Part 761. In this conclusion, the Town does not
 propose to separately manage that steel where the PCB concentration in the paint was
 found to be ≥50 ppm.
 - See Section C, Comment 6 re: iron content of samples and effect on PCB concentrations. EPA notes that no such analysis was run on the additional samples collected in March 2017.

The iron content was included for litigation purposes. As previously discussed, we do not believe that this analysis provides useful information and it was discontinued.

b. Please be aware that to be an *Excluded PCB Product* all criteria specified under the *Excluded PCB Product* definition at 40 CFR § 761.3 must be met, not just the PCB concentration. There is no discussion of this in the request.

We believe that the steel may be considered an Excluded PCB product under the definitions in that 1) The PCBs are present in paint that was manufactured or used before October 1, 1984; and 2) the present-day PCB concentrations are less than 50 ppm due to reasons other than dilution (e.g. only 1 coat of paint, not multiple coats that could dilute the sample); and are not present due to leaks or spills of PCBs.

c. Unless the Town can explain why that data (both Town and Partner samples) showing PCB concentrations ≥ 50 ppm is not valid data, these data must be considered for waste disposal.

While we believe the post decontamination results to be more valid, we agree that those sections of steel where a previous result indicated >50 ppm will be disposed of as a PCB Bulk Product.

- d. In this submittal, the Town is requesting use of the low pressure water jetting system followed by wipe sampling to support the decontamination of the steel.
 - Please clarify if the Structural Steel Decontamination and Wipe Sampling Plan (Rev. 3, November 14, 2016) would be the procedure used for the remaining steel on the site.

This is confirmed

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ii. What is the proposed disposition of the < 50 ppm PCB-containing painted steel beams? (i.e., where would these items be disposed of). The last contractor work plan that EPA reviewed was Rev. 7, November 7, 2016. It is not clear that this is the most current plan given the date of the steel decontamination plan.

The plan remains to sell the steel to Schnitzer who commonly receives and handles Excluded PCB Products.

Schnitzer Northeast 69 Rover Street Everett, MA 02149 Phone: 617-389-8300

At their request, all steel is being sized to 3-4 foot lengths for overseas shipmentThe standard shipment consists of 25,000 tons of steel of which the steel from this project would be a small part.

iii. Given the volume of steel at the site and the variability/representativeness of the paint samples collected, it is unclear why only the low pressure water jetting system and not a high pressure water jetting system was evaluated. The later likely would be able to remove paint and decrease uncertainty associated with sampling and waste management. High pressure decontamination has been used at other sites to successfully remove paint to allow recycling. Please explain why high pressure water jetting was not evaluated as a potential decontamination method.

High pressure water jet removal of the paint was evaluated and determined to not be a cost effective approach.

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Attachments

- ATT 1: Strategic Environmental Services, Inc PCB Sampling Plan for Century Enterprise Center Structural Columns and Trusses Rev 5 dated 9/27/16
- ATT 2: ESML QC Data
- ATT 3: TRC Data Validation internal memo
- ATT 4: Chromatograms for samples #4, #5, #6, #8, #9A-PCB-Paint, #12A-PCB-Paint, and #13A-PCB-Paint and associated calibration standards

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ATTACHMENT 6



CORPORATE OFFICE:

18 Canal Street Holyoke, MA 01040 413-322-7190

EXECUTIVE OFFICERS:

Julio Bermejo, Owner/President
Charles Hughes, General Manager
Greg Gray, Chief Estimator Demolition and Abatement
Thomas MacQueen, Senior Project Estimator/Corporate Safety Director

AMERICAN ENVIRONMENTAL ORGANIZED: February 2005

COMMONWEALTH OF MASSACHUSETTS CERTIFIED MBE FIRM

<u>MA LICENSED ASBESTOS ABATEMENT CONTRACTOR:</u> #AC000639 <u>CT LICENSED ASBESTOS ABATEMENT CONTRACTOR:</u> #000503 <u>CT CLASS A DEMOLITION LICENSE:</u> #2050

INSURANCE COVERAGE:

See Attached Evidence of Coverage

BONDING:

Everest Residence Company:\$10,000,000 single, \$15,000,000 total

EMR:

Experience Rating Modification: 0.84

ANNUAL REVENUE:

2017-19,300,000 2016-22,169,000 2015-\$ 14,436,000 2014-\$ 11,704,000 2013-\$ 9,550,000



Project References

Project: Gibbs Middle School Owner: Town of Arlington, MA

General Contractor: Shawmut Design & Construction

Client: Shawmut Design & Construction

Client Contact: Phil Conroy, Project Manager 617-699-1065

Project Dates: July, 2017-March 2018

Contract: \$1,500,000

Scope of Work: Selective Demolition and Asbestos Abatement throughout the entire 3 Story Building. The entire building was abated of all asbestos-containing materials and the building was removed of the finishes back to the existing structure. Asbestos-containing materials removed included, but not limited to, floor tile, mastic, pipe insulation, transite, windows and roofing. The selective demolition included, but not limited to, removal of all ceilings, walls, flooring (non-acm), elevator, trenching, MEP's, floor and wall openings.

Project: Primary School, Hanscom Air Force Base

Owner: Army Corps of Engineers

General Contractor: J&J Contractors, Inc.

Client: J&J Contractors, Inc.

Client Contact: Jonathan Braley, President, 508-509-1561

Project Dates: May, 2017-September 2017

Contract: \$900,000

Scope of Work: Asbestos and Building Demolition of the entire school. Asbestos was present in selected areas throughout the school. Upon completion of abatement, AEI demolished the entire building, including the foundation and steam tunnels. American Environmental completed the work ahead of schedule to facilitate the construction of the new school.

Project: SMEF Building 1600, Hanscom Air Force Base

Owner: Army Corps of Engineers

General Contractor: J&J Contractors, Inc.

Client: J&J Contractors, Inc.

Client Contact: Jonathan Braley, President, 508-509-1561

Project Dates: May, 2018-On-Going

Contract: \$1,100,000

Scope of Work: Asbestos and Building Demolition of the entire building. Asbestos was present throughout the entire building and was required to be performed, prior to demolition. AEI removed over 160,000 sf of sheetrock and joint compound containing asbestos as well as 40,000 sf of floor tile and mastic, contaminated crawlspaces and the entire exterior wall as asbestos due to asbestos-containing black waterproofing on the interior of the CMU walls. American disposed of over 500 tons of asbestos waste from the interior of the building in close coordination with the on-site Hanscom Representatives due to signing the waste manifests. Upon completion of abatement, AEI demolished the entire structure, including the crawlspace tunnels and foundation walls as asbestos from the black vapor barrier.



Project References (cont.)

Project: 5-6 Necco Court, Boston, MA

Owner: General Electric General Contractor: None Client: AECOM-Tishman

Client Contact: Michael Bouwman, Project Director 857-383-3924

Project Dates: Jan, 2017-May 2017

Contract: \$1,900,000

Scope of Work: Asbestos Abatement, Lead Abatement and Selective Demolition throughout 5 and 6 Necco Court. American Environmental completed the work throughout the two 6-story buildings for the new GE headquarters. The work included the clean-up of extensive pigeon guano, asbestos abatement in various locations throughout the buildings, removal of the regulated materials and the complete lead abatement by sand blasting methods on over 210,000 sf of surface.

Project: MGM, Springfield, MA

Owner: Blue Tarp Redevelopment, LLC General Contractor: AECOM-Tishman

Client: AECOM-Tishman

Client Contact: Pio Monsini, Superintendent 774-273-1816

Project Dates: Jan, 2016-June 2017

Contract: >\$3,500,000

Scope of Work: Abatement, Selective Demolition and Building Demolition throughout the MGM Springfield Casino Project. Asbestos Abatement was performed on the Interior and Exterior of Multiple buildings throughout the property including the removal of regulated materials, oil tanks and contaminated soil. American Environmental also performed the selective demolition on the 11 story high rise building as well as the separation and building demolition of the Armory and various buildings around the site.

Project: Martin Luther King School, Cambridge, MA

Owner: City of Cambridge General Contractor: WT Rich Client: Costello Dismantling Inc.

Client Contact: Thomas Berenz, Project Manager, 508-958-9259

Consultant: Fuss & O'Neil

Project Dates: March, 2014-December 2014

Contract: \$4,300,000

Scope of Work: Asbestos and PCB Abatement throughout the entire school. Asbestos and PCB's were present throughout the entire school on the interior as well as the exterior of the building. American

Environmental completed the work ahead of schedule to facilitate the building demolition.



Project References (cont.)

Project: UMASS Amherst West Experiment Station - Asbestos Abatement, Selective Demolition and

Structural Demolition
Owner: UMASS Amherst

General Contractor/Client: Whiting Turner

Client Contact: Tom Mitchell, Vice President, 203-627-4915

Contract Price: \$ 600,000

Project: Belchertown State School, Phase III - Asbestos Abatement and Structural Demolition

Owner: Mass Development

General Contractor/Client: Mass Development Client Contact: Joe Bisceglia, 978-784-2905

Contract Price: \$ 1,300,000

Project: Union Station - Asbestos Abatement, Structural Demolition and Surgical Demolition

Owner: City of Springfield

General Contractor/Client: Daniel O'Connell & Son's

Contract Price: \$ 1,730,000

Project: UMASS Amherst Chapel - Asbestos Abatement, Surgical Demolition and Shoring

Owner: UMASS Amherst

General Contractor/Client: Barr & Barr, Inc.

Client Contact: Mark Fulton, Superintendent, 413-822-4972

Contract Price: \$ 600,000

Project: Mass Moca, Phase 3 - Asbestos Abatement and Surgical Demolition and Shoring

Owner: Mass Moca

General Contractor/Client: Gilbane Building Co.

Client Contact: Dave Deforest, Project Manager 617-293-6839 or Bigs Waterman, OPM 413-441-9310

Contract Price: \$ 695,000

Project: Greenfield Trial Courthouse - Asbestos Abatement & Demolition

Owner: DCAMM

General Contractor: Whiting Turner Construction Co.

G.C. Representative: Tom Mitchell, Vice President, 203-627-4915

Contract Price: \$ 1,000,000

Project: UML-McGauvran and South Dining Hall - Asbestos Abatement and Demolition

Owner: UMASS Lowell

General Contractor/Client: Shawmut Design and Construction Client Contact: Dan Cook, Project Manager 617-908-6990

Contract Price: \$ 950,000

Project: Salem Probate Courthouse - Asbestos Abatement and Surgical Demolition

Owner: DCAMM

General Contractor/Client: W. T. Rich Co.

Client Contact: Rob Day, Project Manager, 508-735-8887

Contract Price: \$ 1,037,000